

REMARKS

Applicant respectfully requests reconsideration. Claims 1, 3, 4, 6, 7, 9-16 and 20-43 were pending in this application. No claims have been amended or cancelled. New claims 44-55 have been added. Support for the new claims can be found, for example, on page 6, paragraph [0030]. No new matter has been added.

Rejections Under 35 U.S.C. §102

Claims 38-43 are rejected under 35 U.S.C. 102(e) as being anticipated by Berger et al. (U.S. Patent Application Publication No. 2003/0148410 A1).

The Office Action alleges that Berger et al. teaches that the “ADAM 12 marker can be detected blood fluids, stool, colon lavage fluids, lymph fluids, and urine via an antibody” (page 4 of Office Action).

Applicant respectfully disagrees and traverses the rejection. A claim is anticipated only if the reference teaches each and every element of the claim (MPEP § 2131). Berger et al. does not teach methods for facilitating the diagnosis of cancers of epithelial origin using patient samples selected from the group consisting of urine, sputum, cerebrospinal fluid, and nipple aspirates.

Berger et al. is directed to a method for detecting colon cancer using patient samples, such as colon cells and colon-associated body fluids (see *e.g.*, paragraph [0060] and paragraph [0110]). A “colon-associated body fluid” is described as “a fluid which when in the body of a patient contacts or passes through colon cells or into which cells or proteins shed from colon cells are capable of passing. Exemplary colon-associated body fluids include blood fluids, stool, colon lavage fluids and lymph fluids” (page 8, paragraph 0069). Applicant respectfully submits that the samples as defined in claims 38-43 are not colon-associated body fluids and do not contact or pass through colon cells or into which cells or proteins shed from colon cells are capable of passing. Berger et al. does not teach the use of urine, sputum, cerebrospinal fluid, and nipple aspirates to detect colon cancer, and therefore does not anticipate claims 38-43.

Accordingly, withdrawal of this rejection is respectfully requested.

Rejections Under 35 U.S.C. §103

Claims 1, 3, 4, 6, 7, 9-16, 20-37 and claims 38-43 are rejected under 35 U.S.C. §103(a) as being unpatentable over Iba et al. (Am J. Pathol. 154(5): 1489-501, May 1999), and further in view of Berger et al. (U.S. Patent Application Publication No. 2003/0148410 A1).

According to the Office Action, “[i]t would have been *prima facie* obvious to one of ordinary skill in the art at the time the claimed invention was made to combine the teachings of both documents assay a plethora of biological samples for ADAM 12, particularly a urine sample, blood or serum” and that one of skill in the art “would have been motivated to do so with a reasonable expectation of success by the teachings of Berger” (page 7 of the Office Action).

Applicant respectfully disagrees and requests reconsideration of this rejection. According to the MPEP § 2143, “[t]he rationale to support a conclusion that the claim would have been obvious is that the substitution of one known element for another yields predictable results to one of ordinary skill in the art. If any of these findings cannot be made, then this rationale cannot be used to support a conclusion that the claim would have been obvious to one of ordinary skill in the art” (emphasis added). The substitution of tumor tissue samples taught by Iba et al. with the colon-associated fluids of Berger et al. would not have yielded a predictable result.

Applicant respectfully submits that, based on the teachings of the cited art, a skilled artisan would conclude that neither form of ADAM 12 can be used in a method directed to the detection and/or characterization of cancer using urine and blood fluid samples.

The Office Action contends that “[t]here is some suggestion or motivation in the references themselves and/or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings” (page 7 of the Office Action).

Applicant respectfully disagrees. Iba et al. measured the distribution of ADAM 12 in a series of 37 tissue specimens from histologically confirmed cases of human carcinomas. Berger et al. specifically advocates the use of colon cells and colon-associated body fluids in a method for detecting colon cancers (see *e.g.*, paragraph [0060] and paragraph [0110]). Neither Iba et al. nor Berger et al. teach that ADAM 12 can be used to detect and characterize cancers of epithelial origin using biological fluids in general. In the absence of such a teaching, one of skill in the art would not have been motivated to substitute the tumor tissue samples as taught by Iba et al. with the colon-

associated fluids of Berger et al. for the detection of cancers of epithelial origin. The skilled artisan, in the absence of the teachings of the instant disclosure that ADAM 12 is present in the biological samples of the instant claims (e.g., urine) and is upregulated in cancers of epithelial origin, would not have replaced the tissue samples of Iba et al. with the colon-associated fluids of Berger et al., simply because ADAM 12 can be detected in these samples in colon cancer.

Further, Iba et al. teaches away from detecting the presence of ADAM 12 in urine and blood samples obtained from a cancer patient. According to Iba et al. the membrane-anchored form of ADAM 12 (ADAM 12-L) is up-regulated in breast carcinoma tissues while, the secreted form (ADAM 12-S) is present in both normal and tumor tissue. In light of these teachings, a skilled artisan would have no expectation that ADAM 12 can be used in a method for detecting and characterizing cancers of epithelial origin using urine and blood samples. Because the secreted form of ADAM 12 does not differentiate between cancer and normal tissues, while the membrane-bound form of ADAM 12 is not expected to be present in biological fluids, one of ordinary skill in the art would not have any expectation of success in diagnosing cancers of epithelial origin by detecting ADAM 12 in biological fluids. Applicant respectfully submits that since the substitution of tissue samples as taught by Iba et al. with the colon-associated fluids of Berger et al. would not yield predictable results, this rationale cannot be used to support a conclusion that the claims would have been obvious to one of skill in the art.

MPEP §2141.02(VI) clearly sets forth that “a prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention (emphasis original). By ignoring the converse teaching of Iba et al., the Office is selectively focusing on certain teachings of the prior art and ignoring others. The Office Action contends that “Applicant’s arguments are moot because the claims do not delineate any particular species of the protein” (page 5 of the Office Action). Applicant respectfully submits that, based on the teachings of the cited art, a skilled artisan would conclude that neither form of ADAM 12 can be used in a method directed to the detection and characterization of cancer using urine and blood fluid samples. Accordingly, Applicant should not be required to limit the claims to any particular species of ADAM 12.

In conclusion, because the substitution of tumor tissue samples as taught by Iba et al. with the colon-associated fluids of Berger et al. would not have yielded a predictable result, and the teachings found within the cited references themselves would not have led the skilled artisan to the combination, the cited references do not render the instant claims obvious.

Accordingly, withdrawal of this rejection is respectfully requested.

Double Patenting Rejection

Claims 1, 3, 4, 6, 7, 9-16 and 20-43 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 21-24, 42 and 44 of copending Application No. 12/085,134.

The rejection is a provisional one since claims 21-24, 42 and 44 of copending Application No. 12/085,134 have not been found allowable. If the cited claims are found allowable, Applicant will address the rejection.

Accordingly, withdrawal of this rejection is respectfully requested.

CONCLUSION

A Notice of Allowance is respectfully requested. The Examiner is requested to call the undersigned at the telephone number listed below if this communication does not place the case in condition for allowance.

If this response is not considered timely filed and if a request for an extension of time is otherwise absent, Applicant hereby requests any necessary extension of time. If there is a fee occasioned by this response, including an extension fee, the Director is hereby authorized to charge any deficiency or credit any overpayment in the fees filed, asserted to be filed or which should have been filed herewith to our Deposit Account No. 23/2825, under Docket No. C1285.70006US01 from which the undersigned is authorized to draw.

Dated: May 25, 2010

Respectfully submitted,

By


Roque El-Hayek

Registration No.: 55,151

WOLF, GREENFIELD & SACKS, P.C.

600 Atlantic Avenue

Boston, Massachusetts 02210-2206

617.646.8000